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## **SELECTION OF JOURNALS BASED ON THE IMPACT FACTORS: A Case Study**

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*[Journal Citation Reports (JCR) is published by the  
Institute of Information Science. Philadelphia in CD-  
ROM format. It covers 6400 journals. This can be  
used as a useful tool for journal selection: the key  
factor being the impact factor.*

*800 journals out of the 1500 journals subscribed by the  
JRD Tata Memorial Library are covered in the JCR.  
These journals have been selected for the study. A rank  
list of journals is prepared based on the impact factors  
and useful inference is drawn.]*

### **1. INTRODUCTION**

Information economics deals with the economics of information management. In turn, information management is concerned with management of information resources, information personnel, budgets for procurement of information resources etc.

In special libraries, the most important component of the information resource to be managed is journals, they require a major portion of the library budget. Apart from the cost aspects, users in research library totally depend upon micro literature -- journals, serials, patents, standards, specifications, etc.

Marginal utility is an economic concept considered useful in selecting journals for subscription. In this paper an attempt is made to make use of this concept for selecting journals and journal citation reports acts as a tool for the purpose.

## **2. JOURNAL SELECTION**

Libraries all over the world subscribes to journal publications. The selection of journals is made on the basis of some criteria, like importance, high utility, quality, etc.

According to Sengupta (2), the output of the scientific literature has been increasing exponentially. New journals in specialised branches of science are published and established periodicals either multiply the number of volumes per year or split into different titles to cover narrower subject area to cope with flow of information and its communication. The limited resource of libraries, particularly in developing countries do not permit them to increase library budget at a rate commensurate with the rise in the publications. The increase in cost of periodicals forces many libraries to face financial crunch. To surmount this problem they prune periodical subscription list. For these exercises, that is selection or deletion of journals, journal citation report is a useful tool.

## **3. JOURNAL CITATION REPORT (JCR)**

JCR on CR-ROM (1) is a product of the Institute of Scientific Information (ISI), USA. Released once a year, it provides a systematic and objective means of determining the relative importance of science journals. It is based on citation analysis of articles appearing in over 4600 journals in science and engineering during the previous year. JCR is used by many research libraries around the world as a tool in the identification and selection of journals to be subscribed.

The JCR, for each journal, in addition to its title and ISSN, contains five primary data fields with sort and filter options. This enables comprehensive journal evaluation. The primary data fields are total citations, impact factor, immediacy index, cited half-life and number of articles in the particular year.

#### **4. MARGINAL UTILITY OF JOURNALS**

Marginal utility in economics is the additional satisfaction or benefit (utility) that a consumer derives from buying an additional unit of commodity or service. The concept implies that the utility or benefit to a consumer of an additional unit of a product is inversely related to the number of units of the product he already owns.

Impact factor as defined in JCR is a measure of the frequency with which an article in the journal has been cited i.e., citations in a year to articles published in previous year/ number articles published in the previous year.

Here we are calculating the number of citations cites per article. This is marginal utility for the journal because the usefulness of the journal is dependent on the number of citations it receives per article. This factor can be used for selecting journals. High utility means high impact factor. Thus journals of higher utility or high impact factor can be selected for subscription.

IISc library subscribes to 1500 journals. Out of this, 800 journals are covered in the JCR. An analysis of the impact factor of these 800 journals has been described in this paper.

#### **5. METHODOLOGY OF THE STUDY**

For the purpose of analysis, a list of journals subscribed by IISc by subject categories is used. To match with this list of categorised journals, a number of categories have been selected from the JCR and a file of marked list of journals has been prepared.

This list of journals is ranked based on the impact factor. A Graph of impact factor versus rank is plotted. It is noticed that the graph follows an exponential pattern. The graph runs almost close to x-axis after a certain threshold point. This point is suggested as the cut off point for journal subscription. Journals having an impact factor less than the cut off point can be considered for deletion.

6. THE PRESENT STUDY

For the study, biology , chemistry, mathematics and physics were chosen.

The Table below gives data on journals subscribed by IISc library included in the JCR for each subject.

Subject	No. of JLS subscribed by IISc	No. of JLS included in JCR
Biology	102	85
Chemistry	100	66
Mathematics	94	73
Physics	140	109

For all the journals included in JCR for the above subject categories a ranked list of journals is prepared. The graphs were plotted and the cut off points were identified. Results of the analysis is given below:

Subject	Cut off point impact factor	No. of journals for deletion
Biology	2.000	33
Chemistry	1.453	32
Mathematics	0.269	9
Physics	1.224	44

From the above Table, it can be inferred that the cut of point for each subject varies. Using the cut off value, the number of journals that can be considered for evaluation for biology and mathematics is appended.

7. LIMITATION OF THE STUDY

The results of the study are suggestive in nature. It should be used along with other criteria already mentioned earlier before taking a decision. Further, the limitations of the JCR --it

covers only a subset of journals subscribed by a library and its impact factor is limited to a given year also limits the overall implications of the study.

## **8. CONCLUSION**

From the study it is found that the impact factor is an useful factor for journal selection. There are several methods to select the relevant journals. One of the methods is based on the impact factors, since the impact factors are computed using the citations received by the journals.

## **9. REFERENCES**

1. Journal Citation Reports, ISI, Philadelphia, 1995.
2. **Sengupta, I.N.** Bibliometric Research : Growth of biomedical literature, Calcutta, SBA, 1988.



